Good Advice.

Bacon—I see it said that many persons are apt to remain too long in a cold bath, and care should be taken to avoid this mistake, which has a debilitating effect if indulged in often.

Egbert—If you happen to break through the ice this winter, remember that. Don't stay in too long.

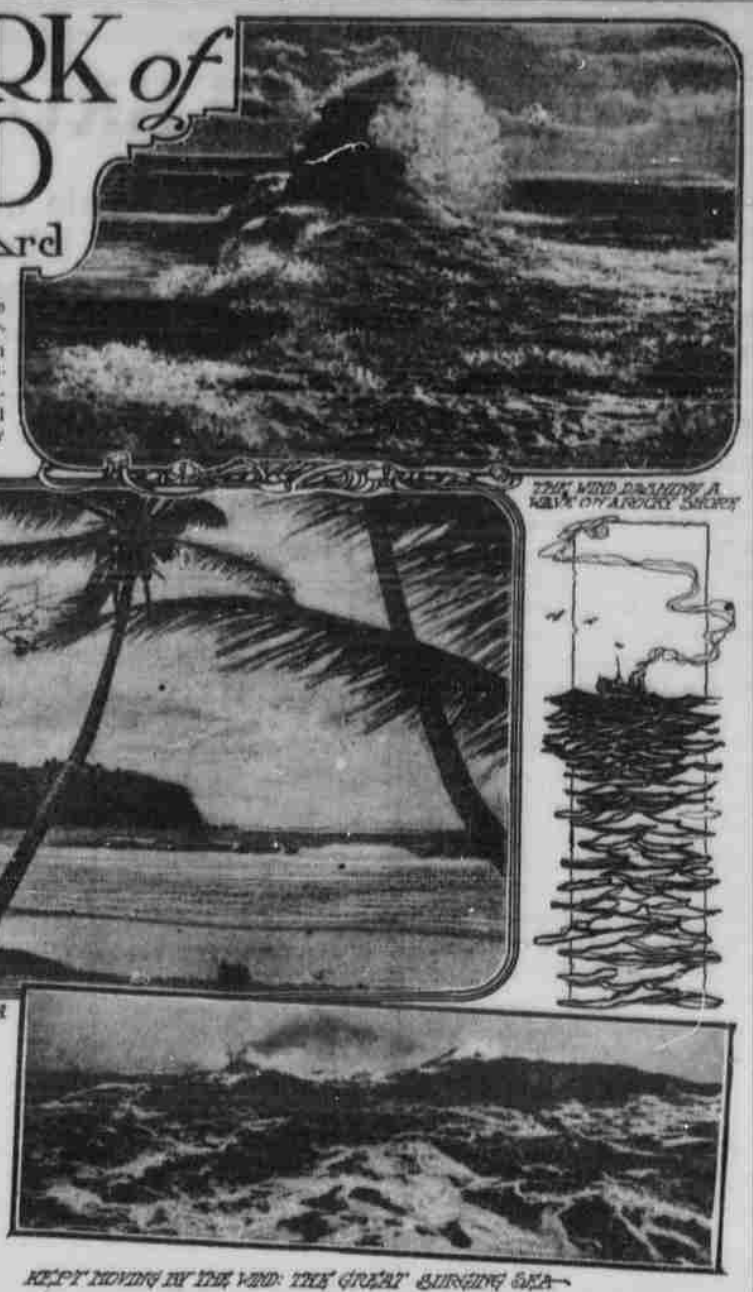
Women as Inventors.

It is probably not generally known that a woman invented the paper bag. Away back in 1870 a patent was granted Miss Margaret Knight, who died only a short time ago at the age of seventy-five. There are said to be 310 woman owners of incorporated establishments in St. Louis, who, besides managing the business, can do the actual manual labor required.

Tennessee limits the work of women to 54 hours weekly.

The WORK of the WIND

By Amy B. Barnard



THE WIND DRIVING A WAVE ON A ROCKY SHORE

THE BEGINNING OF A HURRICANE

KEPT MOVING BY THE WIND: THE GREAT SURGING SEA

WIND is certainly one of the most remarkable and powerful forces of nature, not much studied, except by meteorologists and those whose occupations are directly influenced by it, yet appealing forcibly to our sense of wonder.

For its operations are as extensive as they are varied: it is beneficent and useful one hour, harmful and destructive the next; it toys with a leaf, but it hurls an aeroplane to destruction; it whirls dust in our eyes, but it brings fertilizing showers.

And an interesting fact about it is the relationship it bears to life itself. For consider: one signification of "wind" is "breath," and "spirit" is derived from the Latin "spiritus," breath; while the Greek word for spirit (ruach) means both "wind" and "spirit," and is frequently translated "the spirit of the Lord." Our English "wind" comes from the root wa, to blow, and was originally the present participle of the verb with the sense of "blowing."

Etymologically, therefore, there is an interesting connection between the breath of the living creature, the spirit of the Lord, and the familiar phenomenon of wind, a relationship most suggestive when reading "The Lord God breathed into his nostrils the breath of life," "a sound from heaven as of a rushing mighty wind" at Pentecost, "the wind of the Lord," and the remarkable passage in Ezek. 37:9: "Come from the four winds, O breath, and breathe upon these slain, that they may live."

What is this mighty force? "Merely air in movement," replies the physicist; and he starts explaining the difference between still, dead air and air in motion, and dwells on the fact of the movement being undiscerned by the eye, though its effects are visible through the pressure it exerts upon every object that lies in its path. We compare the ordinary pressure of the air per square inch of surface at the sea level (14.73 lb.) with the tremendous pressure of the wind blowing a hurricane at 92 miles an hour, the kindly pressure it exerts upon our bodies to prevent them from dropping off the earth, and the pressure it exerts inside a soap bubble as well as outside it, thus making possible one of the daintiest nature toys imaginable.

Add a little pressure to the air outside, blow upon the bubble, and the magician wind makes it vanish before our eyes.

How is air set in motion? Briefly, the normal pressure of air is disturbed directly one part is heated more than another, for heat causes air to expand and rise. In doing so it leaves a space into which the cooler surrounding air presses. This, then, is the key to wind: difference of pressure in adjoining parts of a stratum of air, the result of inequality of temperature.

But in determining wind movements certain conditions have to be considered. For instance, there is proximity to land or sea, for the air over land heats more rapidly than that over water. The presence of water vapor influences the creation of wind, since the warm air, which alone can hold water vapor, has a pressure much lighter than that of dry, cold air. The sun, in its apparent journeys north and south, produces seasonal variations in heating which much affect the winds. And, as is well known, the greater the height above sea level, the less the pressure of superincumbent air, and the less the heat. Evidently these conditions must affect the nature, direction and constancy of the movement of the air.

So important is wind in influencing the activities of man and the habitability of any portion of the earth, that a special department of physics, meteorology, is concerned with it and the allied study of weather.

The atmosphere, as the medium for the conveyance of sound waves, electric currents and aircraft, demands increasingly profound understanding to order to master it. And in face of the marvels revealed in recent years, we are quite prepared to listen to further wonders of scientific discovery.

Meanwhile we can produce conditions which create wind on a small scale. All we have to do is to light a fire in a room, and the heated air above the grate, being lighter than the air in the room, ascends the chimney, while the cool outer air from the landing or outside the window flows towards the fireplace and a draught of wind on a small scale is created.

This law of the ascension of warm air and its replacement by cool air is the secret of effectual ventilation. It is a matter of keeping up artificially a constant circuit of air, and, dependent on the aspect of the house and its position with regard to the prevailing winds, of utilizing these conditions to advantage.

One sometimes finds singular ignorance of the law of circulation. A friend will visit a patient lying ill with an infectious disease, and take a seat anywhere but where he should do so, i. e. in a line between the window and the fireplace, or the open door and the fireplace.

Another person tries to escape down a passage filled with smoke when the house is on fire, but fails to avail himself of the freshest current of air near the floor. He should creep on hands and knees along that passage.

Even in these hygienic times people are to be found who insist on tightly closing windows, door and ventilator in the grate at night, preferring warm but vitiated air to the energizing current which, if it had the chance, would renovate body and mind. It is worth while visiting certain wards of hospitals to see what a part wind plays in the treatment of the patients.

And now suppose we apply the important law of circulation to the heating of the atmosphere by the sun within the tropics. There his rays fall direct, and you have a gigantic system of winds created. Naturally, if the earth were motionless the hot air within the tropics would rise and flow north and south to the poles, from which directions the cold air would move low down towards the equator. The rotation of the earth from west to east, and the greater acceleration of movement in the equatorial regions cause these cool winds to lag to the westward, so to speak. Because of their permanent movements over the oceans they have materially aided navigation and trade, and have been appropriately named the Northeast trades in the northern hemisphere, and the Southeast trades in the southern hemisphere.

That is but half the "great circulation." What becomes of the warm air flowing above these trade winds? It gradually descends to the surface in the temperate regions, blowing, of course, in exactly the opposite direction to the trade winds, i. e. towards the northeast and southeast. These westerly winds, by the time they reach the surface, have become cool. Those which play upon the British Isles from across the Atlantic are prevailing southwesterly winds. Farther north, and duplicated in the southern hemisphere, are polar winds, designated in the northern hemisphere, where, owing to the vast land areas, they are of greater importance, the prevailing northeasterly winds. Their raison d'etre is similar to that of the trades. The presence of land, owing to its greater heating power, interferes with the formation and direction of the winds, notably in the case of the monsoons of South Asia, where seasonal variations follow the apparent path of the sun, alternately over land and over water. Land and sea breezes alternate by day and night along a coast because of the unequal heat acquired by the air over water and over sea. The direction of local winds is much affected by the disposition and height of the land, though over huge expanses of water they have a clear path.

It would take too long to consider here the operation and locale of particular winds; but something should be said of the wonderful system of their working. Here is a beneficent transference of warm air from the heated tropical regions, where its continued presence would make life unendurable, to the temperate regions, where its mildness is wanted to "temper" the cold. To the temperate regions, where are the big habitable areas of land, come the winds most suitable for mankind, enabling him to work in comfort; while to the tropical regions blow the cooling trade winds, aiding navigation westward during the ages before the advent of steam and electric power.

The system of the winds is interwoven with the history of mankind—his migrations, his commerce, his industries, his physical and mental activities. Britons owe more of their adaptability and endurance than they imagine to the alternation, the clockwise changes of the wind, from the soft southern breezes, the moisture-laden west winds, to the bracing northeastern and east winds which have acquired icy coldness in passing over the plains and steppes of northeast and east Europe.

A great service performed by wind is the evaporation of moisture and subsequent transference of it in the form of rain clouds. The distribution of moisture is as important as the distribution of temperature already noted. Yet it would be impossible, if wind failed to perform its allotted office of carrying the clouds from over the oceans to the continents.

In conclusion, reference must be made to a most important office fulfilled by the winds—that of nature's scavenger.

It sweeps through the dirty streets and passageways of our cities and carries away choking dust from the roadways in summer, and decaying, dank leaves in autumn.

MADE A NEW CLASSIFICATION

Montana Waiter Announced Lobsters as the Only "Game" on the Menu That Night.

The man from Montana was eating lobster Newburg the other night in a Broadway restaurant.

"Lobsters are common enough to you people here on the seacoast," he remarked to a New Yorker, "but when one gets well inland the fresh lobster becomes a bit more of a novelty. Not that we don't get plenty of lobsters in Montana, but, naturally, there they're not as numerous as down here, and they are regarded as more of a luxury.

"This fact was brought to my attention one night recently in a hotel in Butte. I got in on a rather late train and went into a restaurant about nine o'clock in the evening for dinner. I happened to feel like eating a grouse or a duck or something of that sort. I glanced at the menu and failed to see any birds.

"'Haven't you got any grouse or other game?' I asked the waiter.

"'We ain't got any grouse,' was the reply. 'The only game we have is lobsters.'"

Preparing a Substitute.

"We are to have company for dinner and I don't believe there is a grapefruit to be had in town! What in the world shall I do?"

"Got any oranges?"

"Plenty of them."

"All right. You be splitting the oranges and I'll run down to the drug store and get a pound of quinine to dust them with."

Her Courteous Retort.

Miss Flypp—I wonder if I shall lose my looks too when I get to be your age?

Miss Elder—You will be fortunate if you do.